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Study on Green Energy Audit

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ABSTRACT: This paper, the need of energy auditing or energy monitoring and methodology of energy auditing and methodology of energy monitoring are shown and explained in detail. A genuine effort has been made to organize the energy audit at Delhi Technical campus, Greater Noida, to calculate the energy consumed in a day, week and month and accordingly in a year. Detection of place of energy wastage or more use and calculation of power (unit wise) saving ability in the Canteen, hostel (girls and boys hostel), all departments and college campus with another form of energy wastage has been made by walk-through energy audit. Also, brief study of collected information from different departments and areas of campus where electricity is used has been done to give suggestion cost-effective measures, cost analysis and load analysis to improve the efficiency of energy use. Cost and economy of the particular area play a very important role in any industry so in energy audit estimation of cost or cost analysis is very important so in energy audit of campus implementation of costs analysis and payback periods for every necessary work has been made. Estimated results of all collected data, cost analysis and collection of important data and gathered information made a report or record in which different energy audit methods have been explained. And data file documented. The energy audit for a day is the value or amount of the total used or consumed electrical energy which maintains the scenario of the energy deficiency so analyzing all these it will also provide energy conservation schemes.

KEYWORDS: Energy Audit, Energy efficiency, Power, Accuracy, Monitoring, Energy consumption, Energy management.

I. INTRODUCTION

An energy audit is an analysis of an organization or any workstation energy consumption to find out how much energy and where energy is used in the college campus and to verify and find procedures for energy savings and energy control or cost control. There is now a certified identification of the truth that new technologies and much use of some other technology that already is in use gives the most valuable point for the future reference[1]. The chances stay in the availability of predefined renewable energy or that energy technologies. There has been many paper published regarding energy audit of different place (industry, college, school, and startup), among all the papers a audit research paper titled “electrical energy audit a case study” by Gousia Sultana¹, Harsha.H.U² shares the information regarding energy audit of a college named Nandi Institute of Technology and Management. This paper discloses the steps should be taken while performing energy audit of any place.

Also it disclose about the various instruments that have been used in college and rating of these instruments and their power consumption also give suggestions to change the position and type of material so that energy consumption can be reduced[2]. On the basis of daily energy consumption can be able to estimate the monthly consumption and yearly consumption of the electricity, so on this basis graph between months and amount of energy consumption per month has been shown, also rate of per unit is different for different level like in commercial per unit rate is 7 rupees so cost analysis also done for the college campus energy consumption. Also plot graph between payback period for different appliances and payback year of appliances[3].

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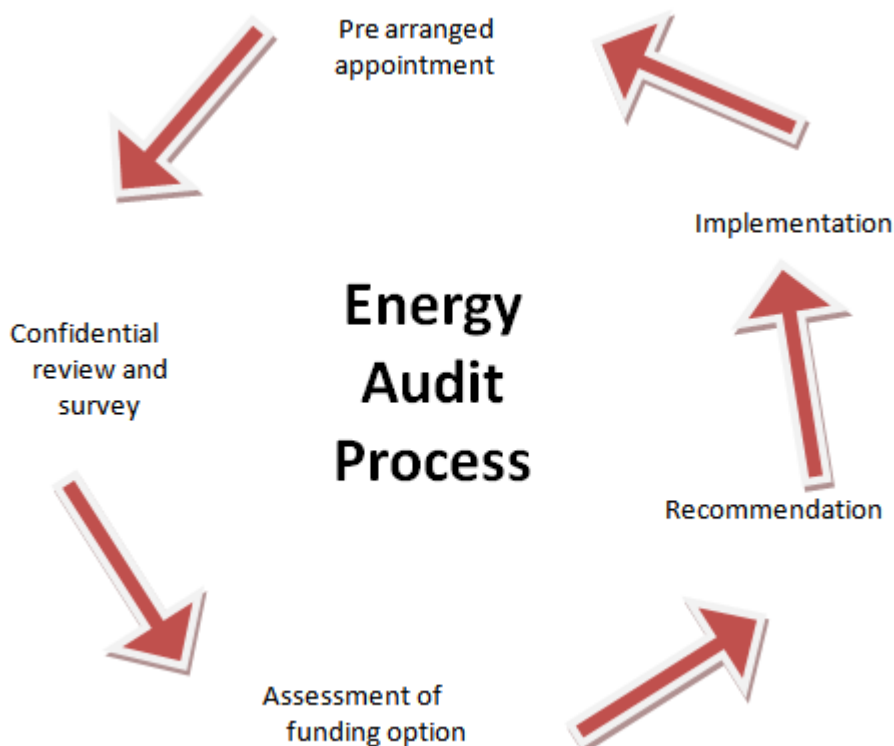


Figure 1: Energy Audit Flow Diagram

To conduct energy audit programs various steps should be taken like if a person who is owner of any organization or workstation first arranged appointment then some confidential review and survey done after that assessment of funding option and after analyzing all the programmed then some recommendation given to the authority then this implementation applied in organization[4].It provides information and graphical representation of the amount of energy consumed by different sections of the area and their cost. Also provide their cost and give suggestions on how this cost could be reduced. On the basis of daily energy consumption can be able to estimate the monthly consumption and yearly consumption of the electricity, so on this basis graph between months and amount of energy consumption per month has been shown, also rate of per unit is different for different level like in commercial per unit rate is 7 rupees so cost analysis also done for the college campus energy consumption. Also plot graph between payback period for different appliances and payback year of appliances[5].

II. LITERATURE REVIEW

Energy Audit of any college and big industry have been conducted from many years it took some time to complete, this auditing comes under Bureau of Energy Efficiency which is responsible for the any energy auditing things, BEE set some auditing rule which should be followed by every auditors. There has been many paper published regarding energy audit of different place (industry, college, school, and startup), among all the papers a audit research paper titled "electrical energy audit a case study" by Gousia Sultana¹, Harsha.H.U² shares the information regarding energy audit of a college named Nandi Institute of Technology and Management. This paper discloses the steps should be taken while performing energy audit of any place. Also it disclose about the various instruments that have been used in

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A research paper on energy audit titled “energy audit of an industrial site: a case study” by Matteo Dongellini*1, Cosimo Marinosci1, 2, Gian Luca Morini1 gives information about the energy audit of an industry. Also energy audits of different places have different situations of the equipment because of the place, environment and weather conditions. So every industry should organise the energy audit programme for their organization so that cost and power consumption can be reduced, also this paper discusses the methodology of energy audit and different equipment of energy audit. Along with this it also discusses the need of energy audit at any place. It provides information and graphical representation of the amount of energy consumed by different sections of the area and their cost. Also provide their cost and give suggestions on how this cost could be reduced. On the basis of daily energy consumption can be able to estimate the monthly consumption and yearly consumption of the electricity, so on this basis graph between months and amount of energy consumption per month has been shown, also rate of per unit is different for different level like in commercial per unit rate is 7 rupees so cost analysis also done for the college campus energy consumption. Also plot graph between payback period for different appliances and payback year of appliances[8].

III. CONCLUSION

In this paper it is concluded that how much electricity a college campus can use, it depends upon the size of campus. Energy audit is a very important method to measure the energy consumption in campus, industry or at any work station. It can give ideas about energy consumption and cost analysis. A good energy audit or energy monitoring of any type of office or workstation home etc. will help to provide the idea to improve and enhance electricity consumption. Energy audit is a plan or it is a monitoring method which comes under bureau of energy efficiency. Also it disclose about the various instruments that have been used in college and rating of these instruments and their power consumption also give suggestions to change the position and type of material so that energy consumption can be reduced. On the basis of daily energy consumption can be able to estimate the monthly consumption and yearly consumption of the electricity, so on this basis graph between months and amount of energy consumption per month has been shown, also rate of per unit is different for different level like in commercial per unit rate is seven rupees so cost analysis also done for the college campus energy consumption.

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